INTERNATIONAL SEARCH REPORT

International application No.
PCT/JP03/14300

A. CLASS Int.	DIFICATION OF SUBJECT MATTER C1 B22D11/06, B22D11/10		
According to	o International Patent Classification (IPC) or to both nat	ional classification and IPC	
B. FIELD	S SEARCHED		
Int.	ocumentation searched (classification system followed b C1 B22D11/06, B22D11/10, B22D	45/00, B22D4//00, B25J1	
Jitsı Kokai	ion searched other than minimum documentation to the ayo Shinan Koho 1922–1996 L Jitsuyo Shinan Koho 1971–2003	Jitsuyo Shinan Toroku Koho	1994-2003
Electronic d	ata base consulted during the international search (name	e of data base and, where practicable, sear	rch terms used)
C. DOCU	MENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where app	propriate, of the relevant passages	Relevant to claim No.
A	JP 6-339753 A (Ishikawajima-Industries Co., Ltd.), 13 December, 1994 (13.12.94), Figs. 1, 3, 5, 7; Par. Nos. [& US 5277243 A (Ishikawajima Industries Co., Ltd.), 11 January, 1994 (11.01.94), Figs. 1, 3, 5, 7; Par. Nos. [& US 5184668 A (Ishikawajima Industries Co., Ltd.), 09 February, 1993 (09.02.93), Figs. 1, 3, 5, 7; Par. Nos. [& EP 0450775 A2 (Ishikawajima Industries Co., Ltd.), 09 October, 1991 (09.10.91), Figs. 1, 3, 5, 7; Par. Nos. [0013] to [0038] -Harima Heavy 0003] to [0008] -Harima Heavy 0003] to [0008] a-Harima Heavy	1-10
X Furth	er documents are listed in the continuation of Box C.	See patent family annex.	
* Special categories of cited documents: "A" document defining the general state of the art which is not considered to be of particular relevance "E" earlier document but published on or after the international filing date "L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified) "O" document referring to an oral disclosure, use, exhibition or other means "P" document published prior to the international filing date but later than the priority date claimed		"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art document member of the same patent family Date of mailing of the international search report	
Date of the 04 F	actual completion of the international search rebruary, 2004 (04.02.04)	17 February, 2004	(17.02.04)
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ategory*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No
A	JP 6-339751 A (Ishikawajima-Harima Heavy Industries Co., Ltd.), 13 December, 1994 (13.12.94), Figs. 1, 3, 5, 7 to 9; Par. Nos. [0015] to [0044] & US 5259439 A (Ishikawajima-Harima Heavy Industries Co., Ltd.), 09 November, 1993 (09.11.93), Figs. 1, 3, 5, 7 to 9; Par. Nos. [0003] to [0008]	1-10
А	JP 61-176447 A (Ishikawajima-Harima Heavy Industries Co., Ltd.), 08 August, 1986 (08.08.86), Fig. 1; page 2, upper right column, line 18 to page 3, upper left column, line 3 (Family: none)	1-10
A	JP 5-115962 A (Yamaha Motor Co., Ltd.), 14 May, 1993 (14.05.93), Figs. 2, 4; Par. Nos. [0008] to [0024] (Family: none)	1-10
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